

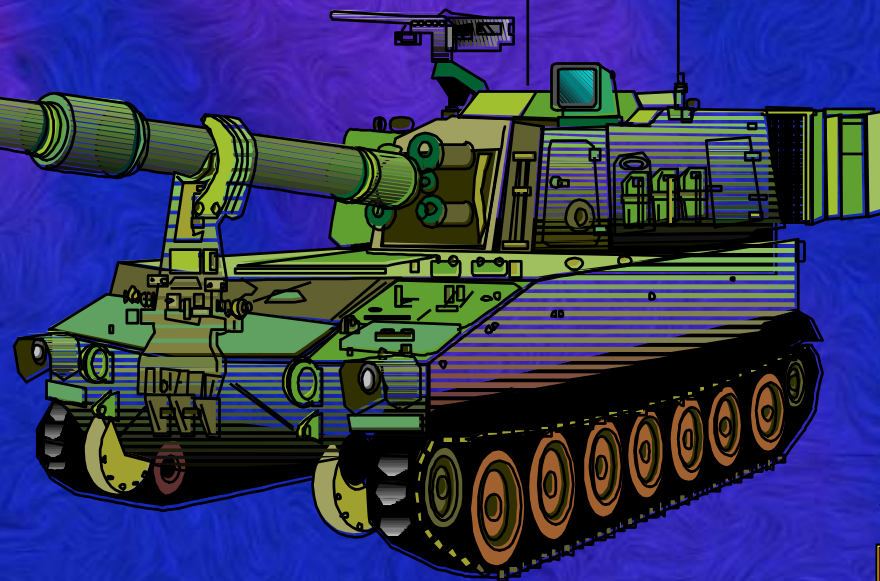
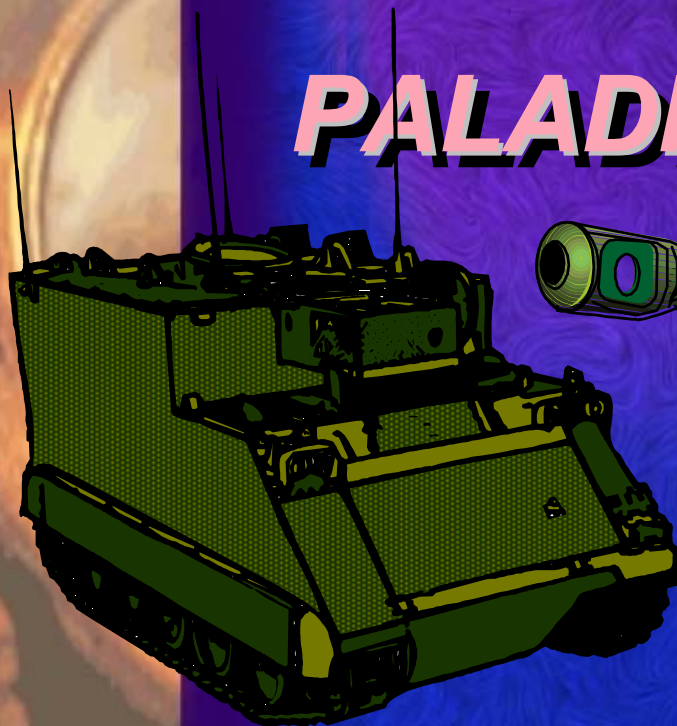




*PALADIN NET TEAM*

**- SA -**

# **INTRODUCTION AND OVERVIEW OF THE PALADIN M109A6 SYSTEM**



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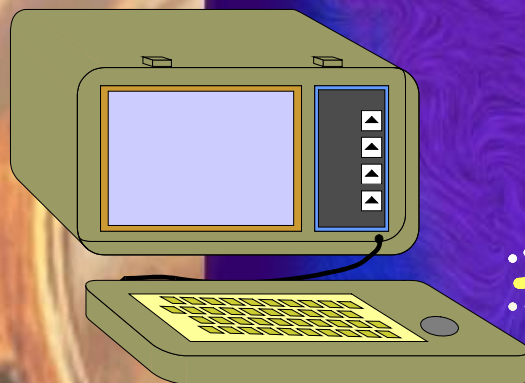




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# BATTERY COMPUTER SYSTEM

## VERSION 11/PALADIN PROGRAM



**LCU**



**(PALADIN)**

**THE KINGS BEST**

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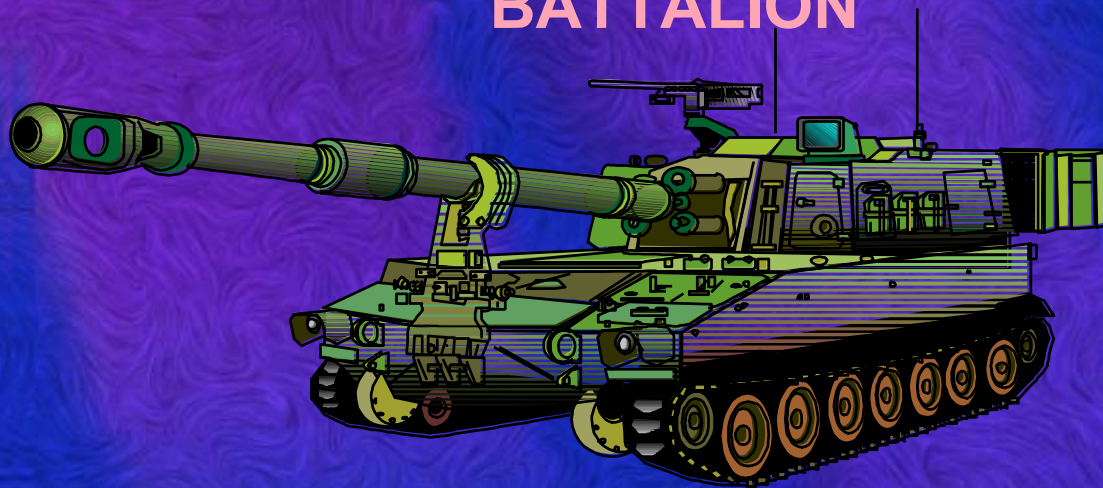




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# **FM 6-70**

## **TACTICS, TECHNIQUES, AND PROCEDURES FOR THE M109A6 (PALADIN) HOWITZER SECTION, PLATOON, BATTERY, AND BATTALION**



**UNITED STATES ARMY FIELD ARTILLERY  
SCHOOL**

**FORT SILL OKLAHOMA**

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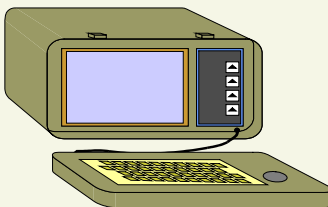


# TB 11-7025-293-10-1

TB 11-7025-293-10-1

TECHNICAL BULLETIN

OPERATOR'S MANUAL  
CANNON  
BATTERY COMPUTER  
SYSTEM SOFTWARE  
FOR



FIRE CONTROL SYSTEM

AN/GYK-37

(NSN 1230-01-359-8522) (EIC: N/A)

HEADQUARTERS, DEPARTMENT OF THE ARMY  
15 FEBUARY 1994

HOW TO USE  
THIS MANUAL 0-1

GLOSSARY 1-5

CONTROLS AND  
INDICATORS 2-1

DATA DISPLAY,  
ENTRY  
AND PROCESSING 3-1

SYSTEM  
INITIALIZATION 4-1

INDEXES AND  
SUMMARIES 5-1

DATA BASE 6-1

REQUEST AND  
SPECIAL  
REPORTS 7-1

SUBJECT  
INDEX INDEX 1

•SAME MANUAL AS  
BEFORE

•USE THE M109A6  
ENTRIES

•TWO VOLUMES

•ORGANIZED IN  
CHAPTERS

•SUBJECT MATTER INDEX  
IN BOTH VOLUMES





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# TB 11-7025-293-10-2

TB 11-7025-293-10-2

TECHNICAL BULLETIN

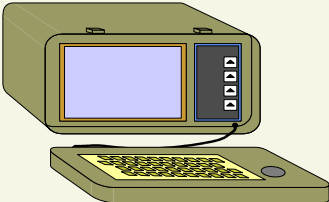
OPERATOR'S MANUAL

CANNON

BATTERY COMPUTER

SYSTEM SOFTWARE

FOR



FIRE CONTROL SYSTEM

AN/GYK-37

(NSN 1230-01-359-8522) (EIC: N/A)

HEADQUARTERS, DEPARTMENT OF THE ARMY

1 AUGUST 1999

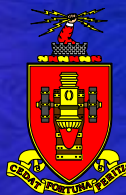
FIRE PLAN PROCESSING	8-1
FIRE MISSION PROCESSING	9-1
ERROR AND WARNING MESSAGES	E-1
LEGAL ENTRIES LIST	F-1
LEGAL SHELL/FZ COMBINATIONS	G-1
MOS 13E20 TASK LIST	J-1
MESSAGE FORMAT MATRIX	K-1
GUID TO USING MESSAGES	L-1
MUZZLE VELOCITIES/ SHELL WEIGHTS	M-1
SUBJECT INDEX	INDEX 1

The subject matter index is your friend when it comes to test time. Learn how to use it!!



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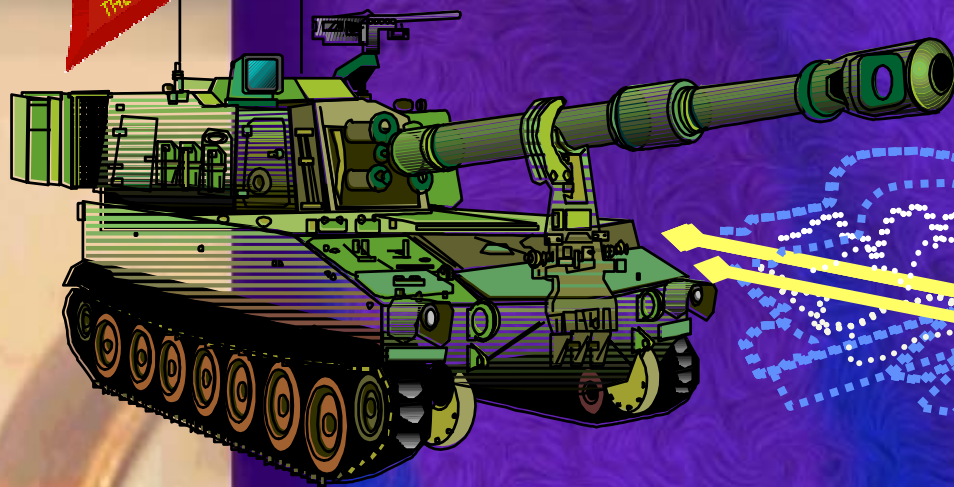






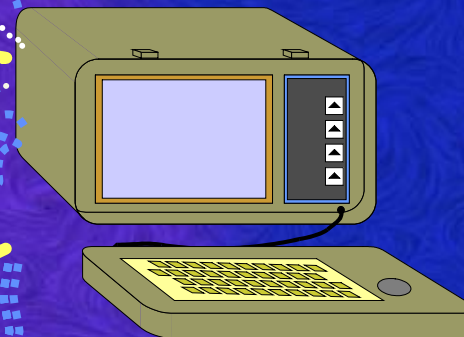
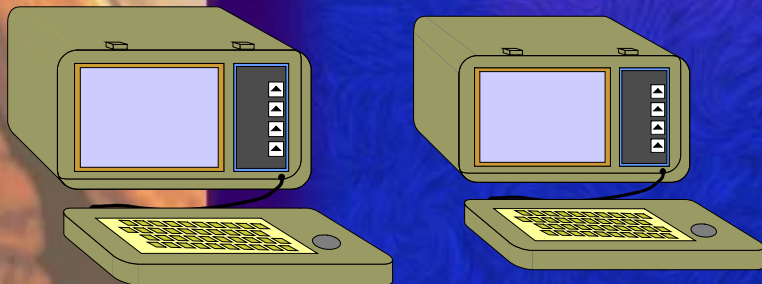
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# ***PALADIN INTERFACE***



***PALADIN  
(AFCS)***

***BN FDC***



***PLT BCS***

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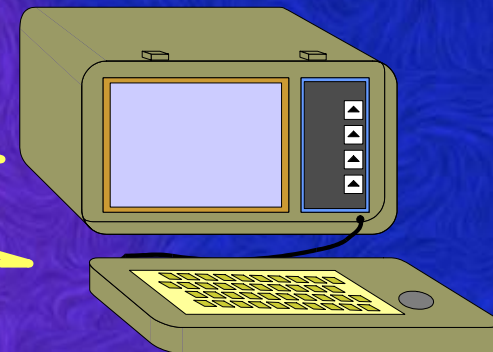


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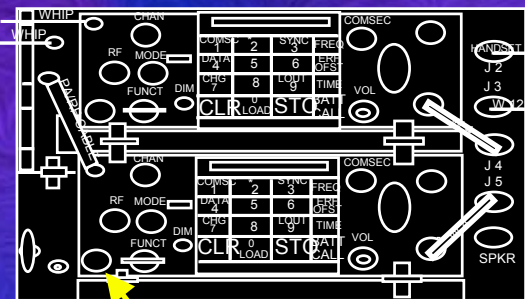
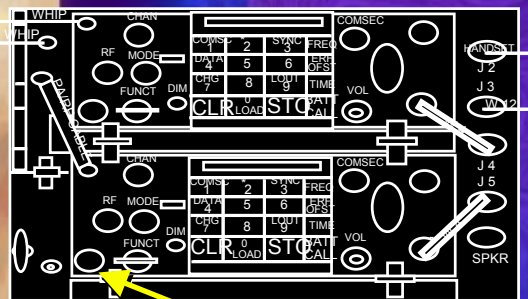
# BATTERY COMPUTER SYSTEM

LCU

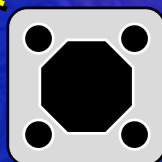
LIGHTWEIGHT COMPUTER UNIT



LCU



LS-685/U



LS-685/U

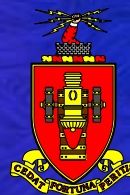


2 EA.

USAFAS

AN/VRC 89 VEHICULAR LONG-RANGE/SHORT RANGE

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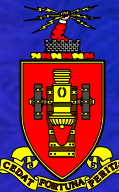
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# PLT BCS/AFCS INTERFACE



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# AFCS CAPABILITIES

- ◆ FULL AUTOMATIC  
POSITIONING (M.A.P.S.)  
BALLISTIC SOLUTIONS  
TUBE POSITIONING
- ◆ TACTICAL  
FLEXIBILITY  
RESPONSE  
NEW RANGES
- ◆ FIRE MISSION PROCESSING  
MISSION/HOWITZER DATA  
AMMUNITION ACCOUNTABILITY
- ◆ MAINTENANCE CHECKS  
PROGNOSTIC DIAGNOSTIC INTERFACE UNIT

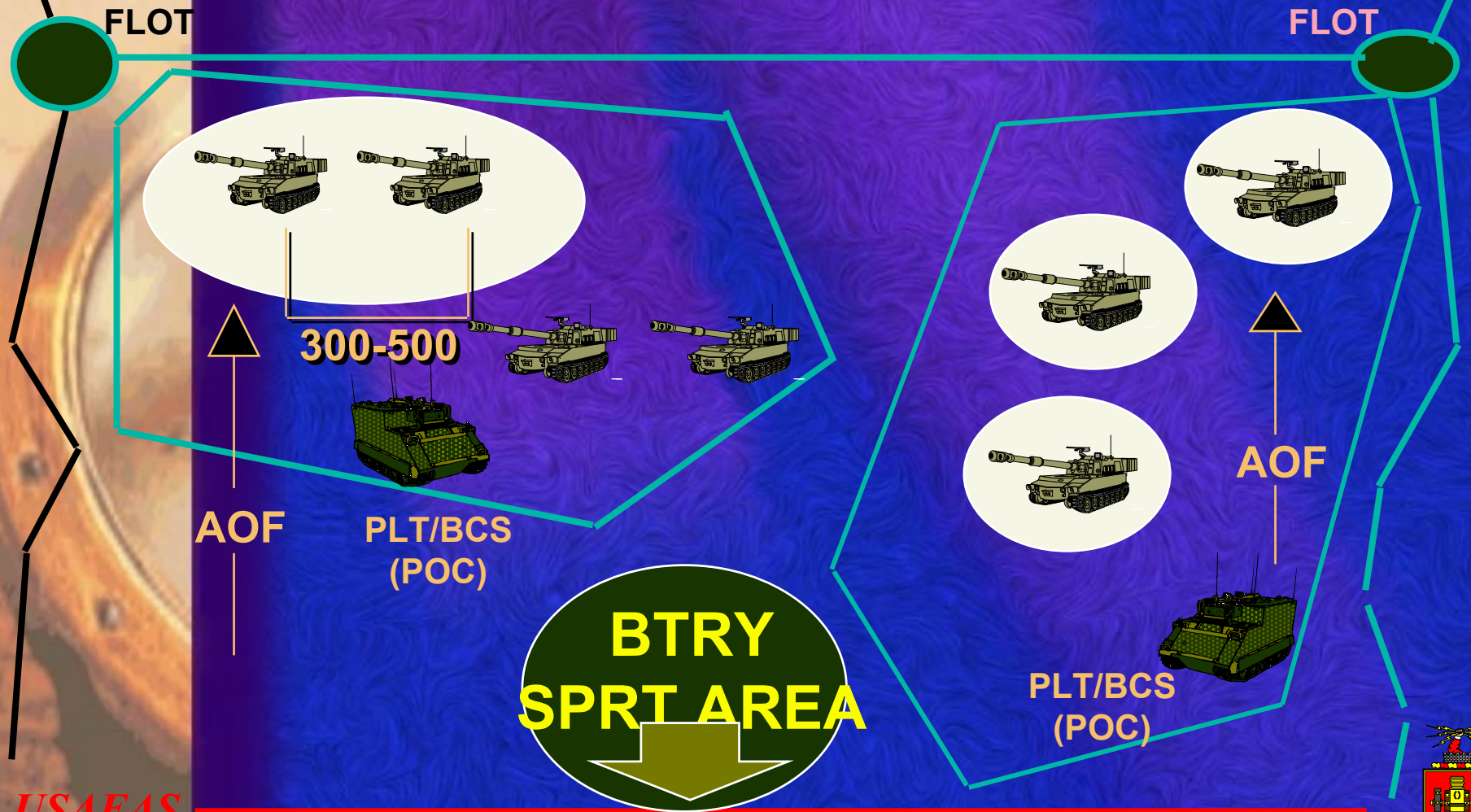






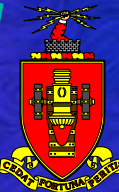
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# OPERATIONAL EMPLOYMENT



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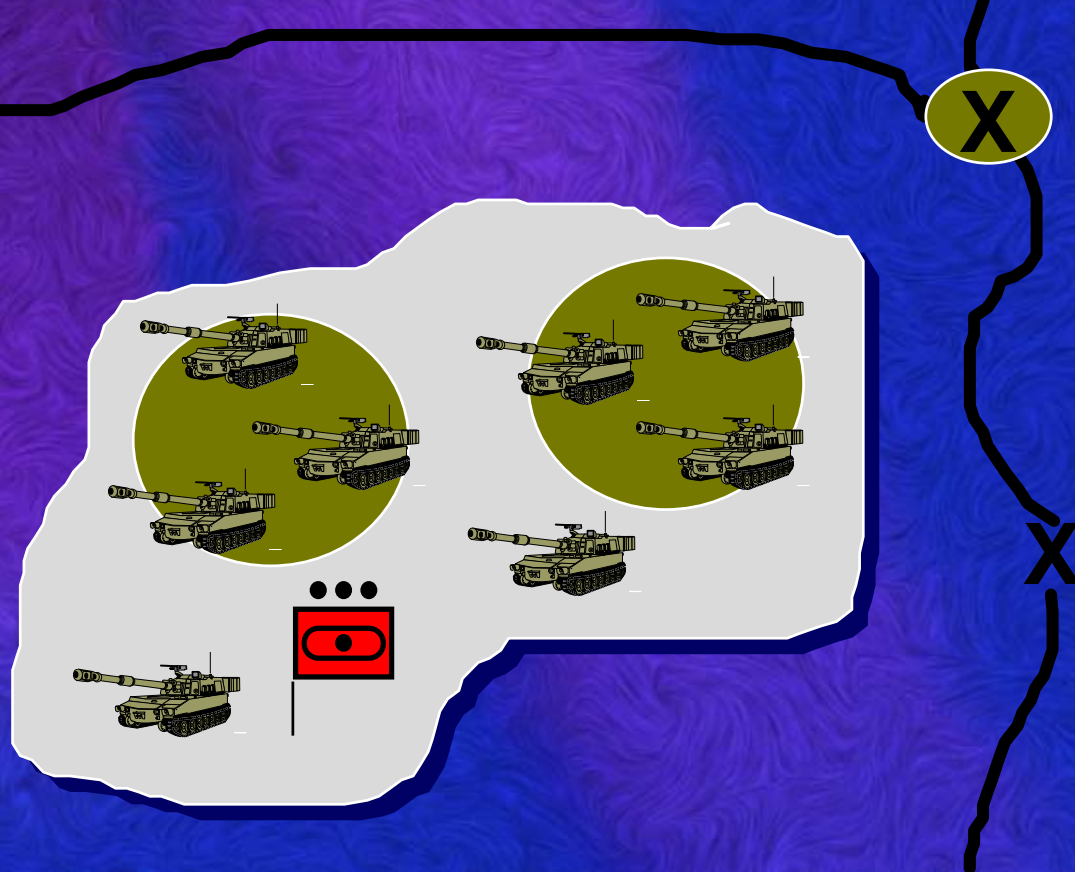
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# PLATOON FIRING AREA



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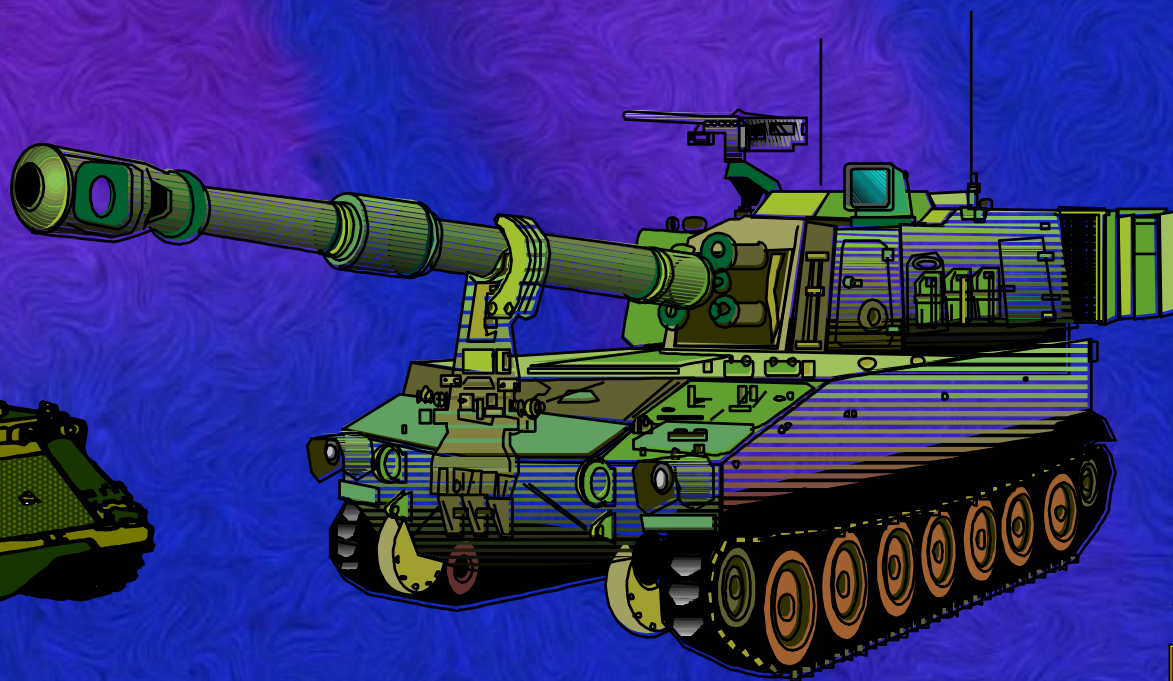
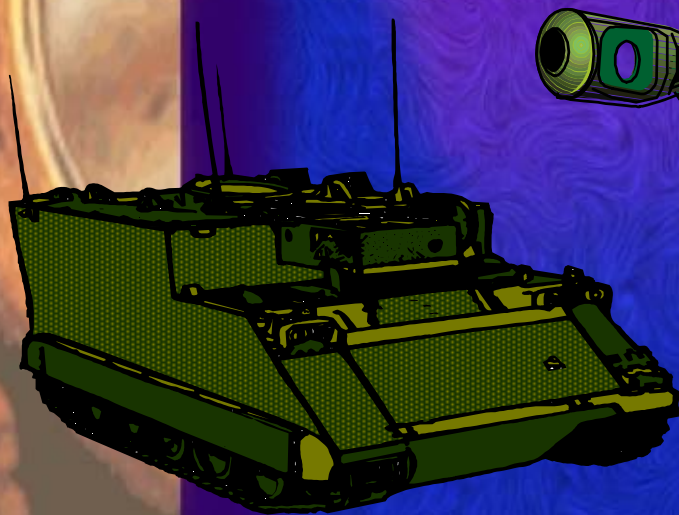






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# ***PALADIN PLATOON OPERATIONS***



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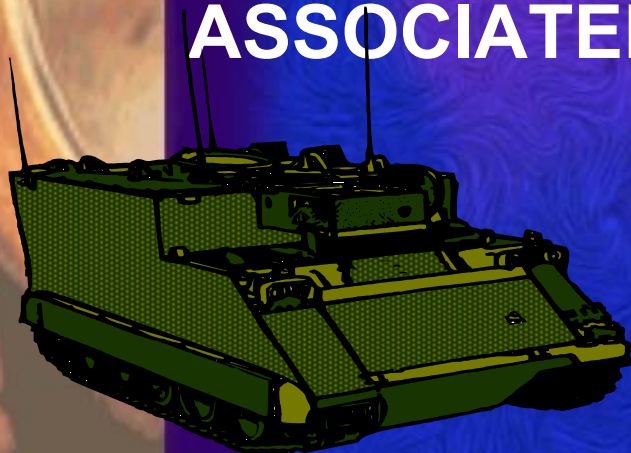
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# COMMAND AND CONTROL CENTER

- TACTICAL MANAGEMENT OF PLATOON
- HOWITZERS COMPUTE TECHNICAL SOLUTION
- POC PERFORMS FUNCTIONS NORMALLY ASSOCIATED WITH BN TOC'S



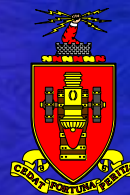
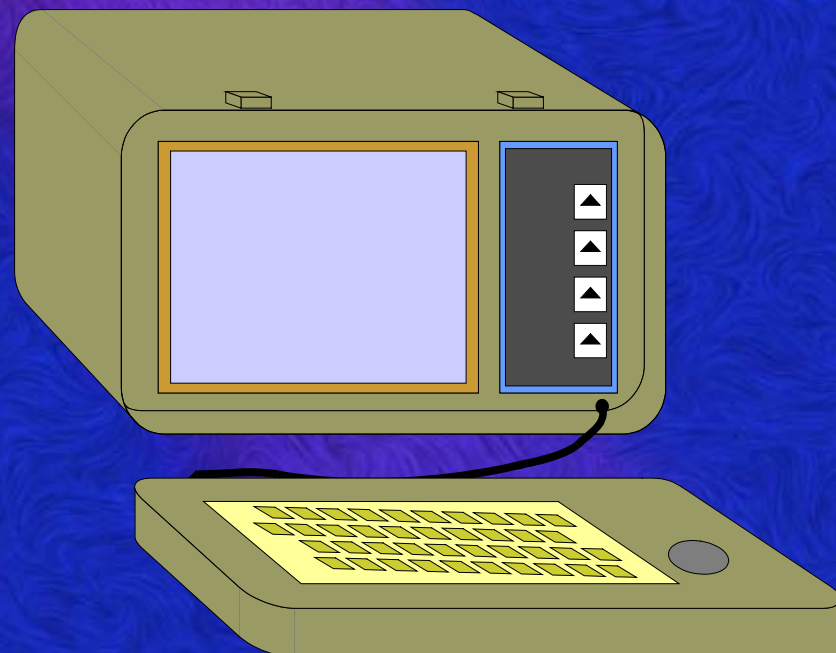




# PRIMARY FUNCTION

## DATA BASE MANAGEMENT

- HOWITZER DATA
- GEOMETRY
- MET
- AMMO
- MVV





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# SECOND FUNCTION

CONTROL MOVEMENT

**CENTRALIZED  
&  
DECENTRALIZED**

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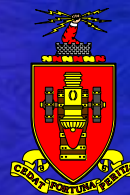






# THIRD FUNCTION

- TACTICAL FIRE DIRECTION
- TECHNICAL FIRE DIRECTION





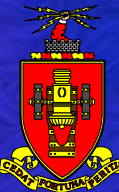
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# **PLATOON OPERATIONS CENTER (POC) PERSONNEL**

- 1 EA-PLATOON FIRE DIRECTION OFFICER, 2LT/1LT**
- 1 EA-FIRE DIRECTION CHIEF (13E30), SSG**
- 1 EA-FIRE DIRECTION COMPUTER (13E20), SGT**
- 5 EA-FIRE DIRECTION SPECIALIST (13E10), SPC/PFC**

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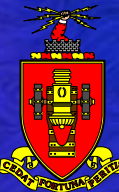
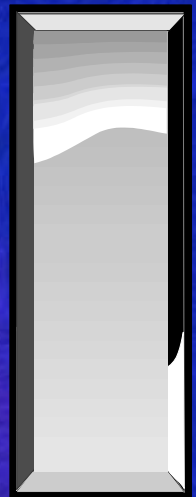






# **FIRE DIRECTION OFFICER**

- ◆ Supervise overall conduct of fires
- ◆ Provide tactical and technical fire direction as required
- ◆ **Supervise platoon database**
- ◆ Disseminate tactical information
- ◆ Maintain situation maps and howitzer locations
- ◆ Control fires of adjacent platoon as required
- ◆ **Check for intervening crests**
- ◆ **Enforce secondary checks**





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# FIRE DIRECTION CHIEF

- INFO POSTED & VERIFIED
- VERIFY BCS INITIALIZATION
- VERIFY MET, MVV, REG DATA
- CALIBRATION
- VERIFY DATABASE
- REPORTS
- SAFETY & INTERVENING CREST
- ENFORCE CONOPS
- COMMO & MAINTENANCE



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# **FIRE DIRECTION COMPUTER**

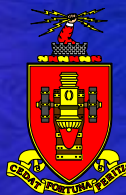
- OPERATE BCS
- INPUT, UPDATE DATA BASE
- ANNOUNCE CRITICAL INFO

# **FIRE DIRECTION SPECIALIST**

- MAINTAIN SIT MAP
- MAINTAIN POSITION MAP
- POST DATA CHARTS
- RTO & DRIVER

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# **DATA BASE MANAGEMENT INFORMATION**

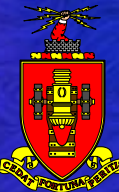
**MVV \* METT \* PROP TEMP \* AMMO \* PROJO WT. \* REG.**

## **FROM FDC TO GUN:**

- 1. MAP:MOD (WHAT AREA THE HOWITZER IS OPERATING IN)**
- 2. HOW:SBT (WHO THE HOWITZER IS IN RELATIONSHIP TO BCS)**
- 3. MET**
- 4. HOW:AMOUN (AMMO)**
- 5. HOW:MOVE (WHERE HOWITZER IS MOVING, AZ OF FIRE, FIRE AREA)**
- 6. BCS:MVV (VARIATION OF MUZZLE VELOCITY)**

## **FROM GUN TO FDC**

- 1. HOW:AMOUN**
- 2. REQUEST FOR INITIALIZATION(I.e. MAPMOD,HOW:SBT,MET,REG)**
- 3. POC CAN REQUEST**
  - A. HOWITZER LOCATION AND AZ OF FIRE**
  - B. BCS:MVV**

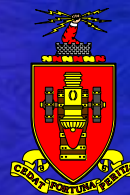






# TACTICAL INFORMATION

- BATTLEFIELD GEOMETRY
- OPERATIONS OVERLAYS
- HOWITZER STATUS DATA
- SURVEY
- REPORTS



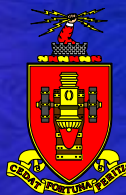


# COMMAND AND CONTROL

- SINGLE, PAIRED, OR AS A PLATOON
- MORE FREQUENT MOVES FOR SURVIVABILITY

## LAND MANAGEMENT

- INCREASED POSITION AREAS FOR OPERATIONS (1000 X 2000 METERS)
- COORDINATE LAND USAGE

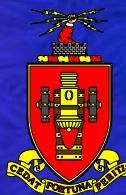






# **CENTRALIZED CONTROL**

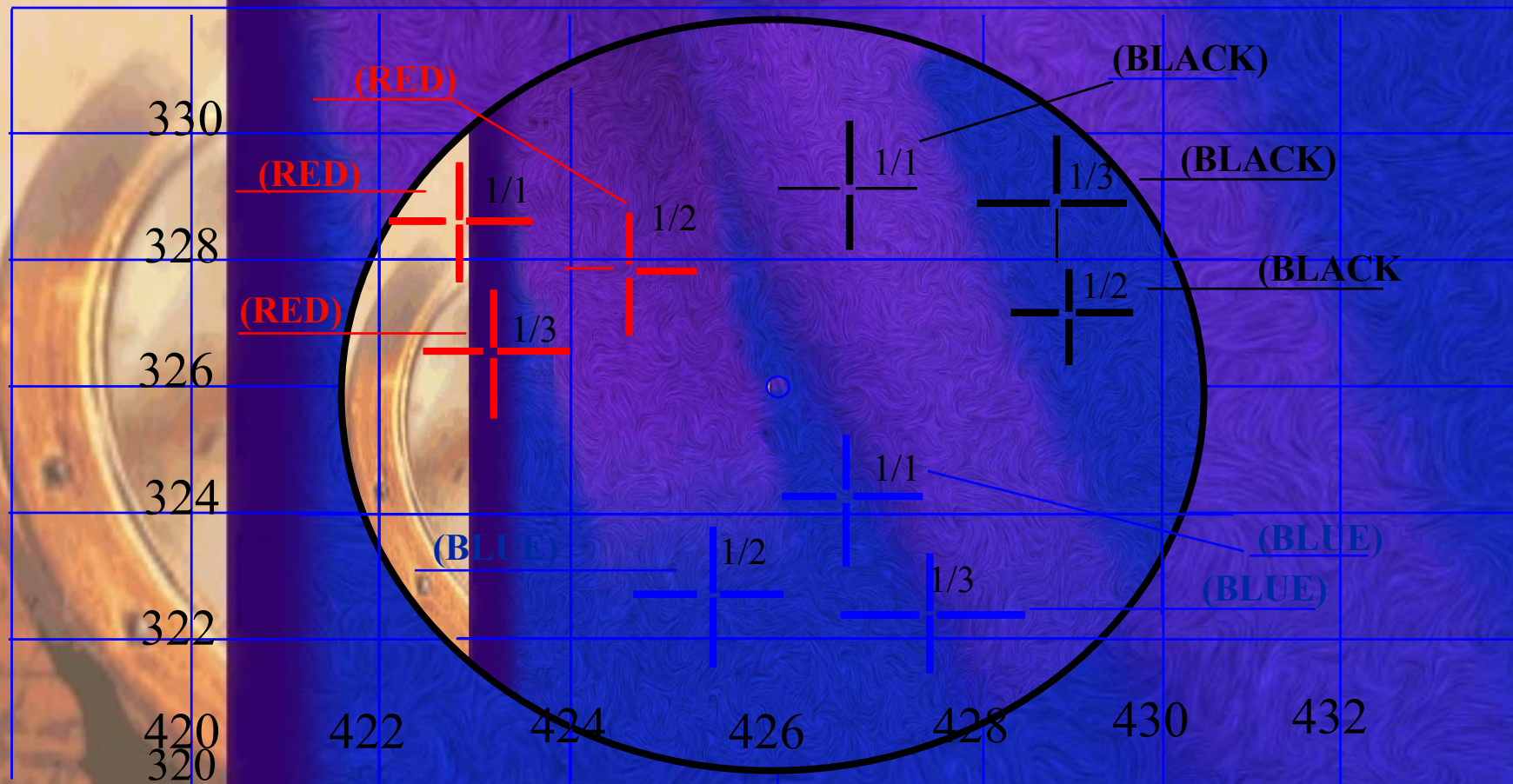
- HOWITZERS MOVE ONLY WHEN ORDERED TO
- USED IN LIMITED TERRAIN
- HOWITZERS ARE IN DEGRADED MODE
- MAXIMUM CONTROL IS NEEDED
- TIMING IS CRITICAL TO SUPPORT MANEUVER
- EASIER TO TRACK





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# HOWITZER TRACKING CHART 1:10,000 (CENTRALIZED CONTROL)



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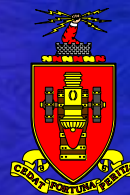






# DECENTRALIZED CONTROL

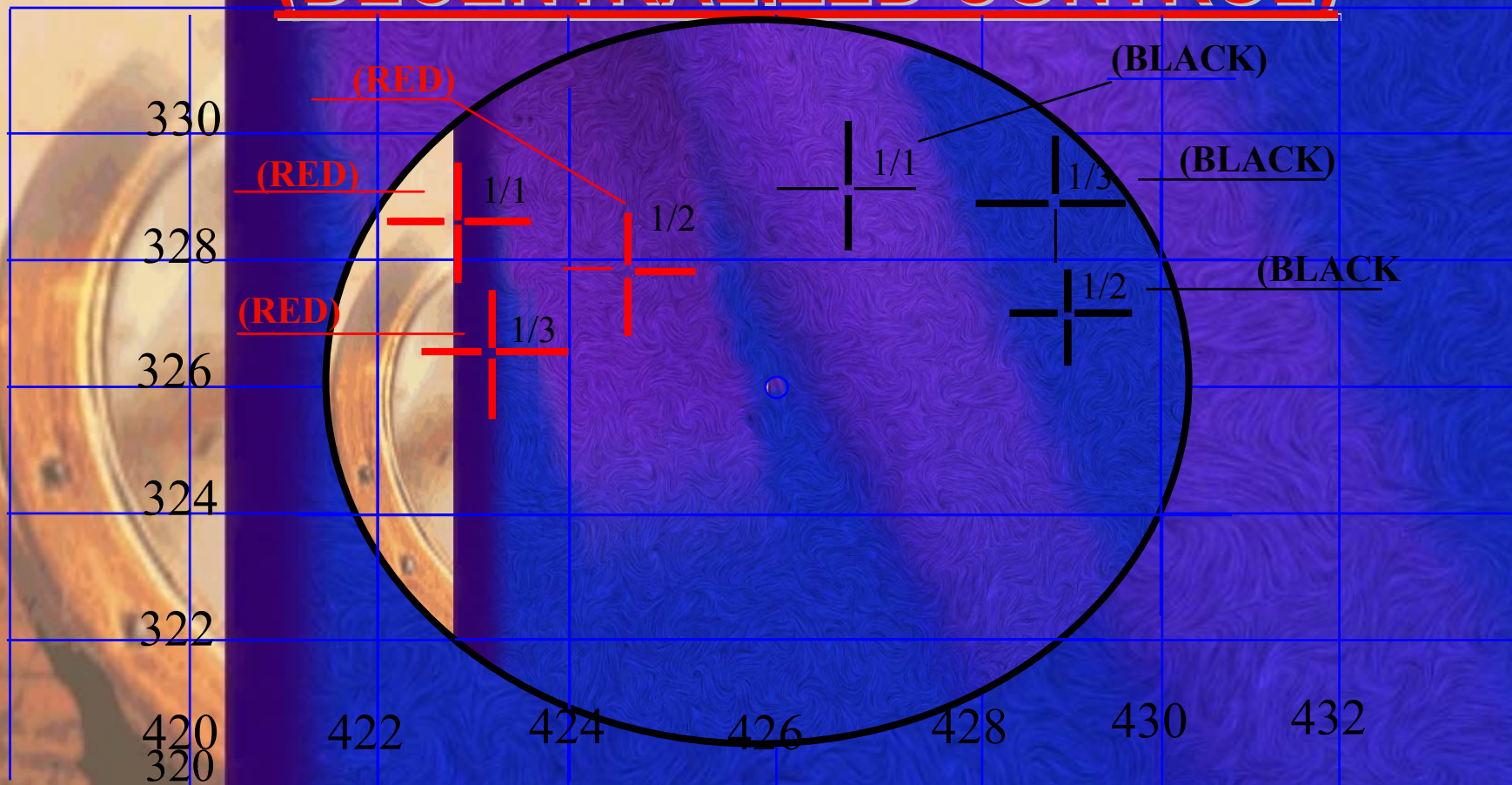
- MOVE AT DISCRETION OF HOWITZER SECTION CHIEF
- MORE DIFFICULT TO TRACK
- USE COMMANDER'S GUIDANCE





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# HOWITZER TRACKING CHART 1:10,000 (DECENTRALIZED CONTROL)



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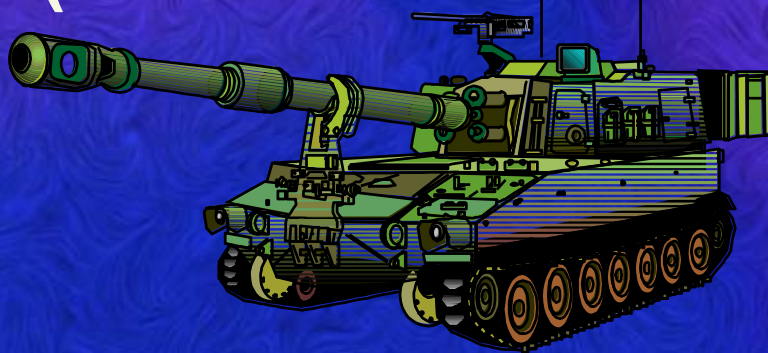


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# MISSION PROCESSING

- REGISTRATIONS
- SPECIAL MISSIONS
- MASS FIRES

(COMMON AZ OF FIRE)



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# DEGRADED OPERATIONS

- ADJACENT PLATOON TAKES CONTROL
- AFCS TRANSMITS REQUIRED INFORMATION
- POCS EXCHANGE INFO RELATIVE TO HOWITZERS

**POC MUST BE PREPARED TO DO  
CHANGE OVER AT ANY TIME**

